UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 26 2015

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

Ms. Robin T. Ferguson
Office of Surface Mining Reclamation and Enforcement
U. S. Department of Interior
1951 Constitution Avenue, NW
Washington, DC 20240

Dear Ms. Ferguson:

In accordance with our responsibilities pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality Regulations (40 CFR Parts 1500-1508) and our NEPA review responsibilities under section 309 of the Clean Air Act, and pursuant to our responsibilities under section 501(B) of the Surface Mining Control and Reclamation Act of 1977 (SMCRA), the Environmental Protection Agency (EPA) has reviewed the Office of Surface Mining Reclamation and Enforcement's (OSMRE) Draft Environmental Impact Statement (EIS) in regard to proposed regulations (at 30 CFR Chapter VII) for the implementation of SMRCA. EPA appreciates the opportunity to work with OSMRE in the development of this rule and supports your efforts to minimize the adverse impacts of surface mining operations on surface water, groundwater, fish, wildlife, and related environmental values, with particular emphasis on protecting or restoring streams and aquatic ecosystems. In addition to protecting water quality, the proposed rule offers the opportunity for improved consistency and efficient implementation of regulatory provisions under both SMCRA and the Clean Water Act (CWA). Our comments and recommendations on the Draft EIS are discussed below.

The Draft EIS provides a good overview of the alternatives, existing environment, coal mining industry and the regulatory environment. The Draft EIS evaluates a "No Action" Alternative and eight Action Alternatives. The alternatives provide varying degrees of protection to streams and aquatic resources by taking actions to prevent material damage to the hydrologic balance outside the permit area, by collecting and using pre-mining baseline data, performing water monitoring, and using other related assessments. The proposed rule would also improve the handling of toxic materials, better manage surface water run-off and improve procedures related to the disposal of mine waste.

To better protect streams, proposed activities will be reviewed as part of the permitting process in greater detail and approval of exceptions or waivers from prohibitions will need to meet additional criteria. For example, actions related to the restoration of approximate contour, construction of spoil fills, minimization of excess spoil, as well as the management of permanent impoundments will be reviewed in greater detail pursuant to the project's permit and also have to meet specific criteria. In an effort to improve

protection or enhancement of fish and aquatic wildlife resources, the proposed rule updates and strengthens procedures for the protection of federally listed threatened or endangered species and includes measures related to the conservation of soil and improved revegetation.

The Preferred Alternative (#8) includes an expanded suite of baseline monitoring parameters and analyses compared to current SMCRA regulations. EPA is pleased to see the inclusion of monitoring for stream flow parameters, expanded analysis of stream chemistry, including conductivity, monitoring of stream ecological function, inclusion of ground water data and consideration of the importance of ephemeral streams. In addition, we support monitoring during mining and reclamation as well as an annual assessment of biological conditions and meeting expanded criteria before bond release, as described in the Preferred Alternative. These proposed monitoring provisions will provide greater environmental protection for streams and wildlife compared to current provisions.

However, based on our review of the Draft EIS, there may be potential to further reduce environmental impacts in the Preferred Alternative through consideration of additional protective provisions discussed in other alternatives. These include applying additional protections for high quality streams and using data generated from project monitoring efforts to establish corrective action thresholds and inform implementation, as necessary, of effective measures to protect water quality. The detailed comments also offer several recommendations for improving the data analysis and information presented in the Draft EIS. We recommend you consider including additional recent information from the scientific literature into the alternatives analysis. We have rated the Draft EIS as Environmental Concerns and Insufficient Information (EC-2) based on not having supplied enough data and information to support the EIS, including stream restoration and impacts to streams and aquatic resources. We offer our detailed comments in the attachment for your consideration.

EPA appreciates the opportunity to work with OSMRE in the development of this rule, especially in light of our responsibilities under section 501 of SMCRA. Thank you for the opportunity to review this Draft EIS accompanying the proposed rule. If you have questions about our comments, you can contact me at 202-564-5400 or Elaine Suriano at 202-564-7162.

Sincerely,

Susan E Bromm

Susan E. Bromm
Director
Office of Federal Activities

Detailed Comments on the Draft EIS

Additional Information and Data Analysis Needs

We recommend that the Final EIS more thoroughly present the state of the science as to the physical, chemical and biological effects of surface and underground mining operations on the aquatic environment. The Draft EIS does not discuss the existing scientific literature (and multiple state agency datasets) demonstrating that surface mining permits with mining within 100 feet of a stream result in a high percentage of streams with impairments to aquatic life. We recommend that the Final EIS include this relevant information and additional discussion connecting the impacts associated with higher concentrations of TDS/conductivity in reaches downstream of mining activities and the potential to cause material damage to the hydrologic balance.

In addition, we recommend the Final EIS include discussion regarding the monitoring of selenium and EPA's draft aquatic life criterion which is under review. For example, important studies published by Presser, 2013 and Presser and Luoma, 2010 address critical information relating to selenium and its impacts on fish, wildlife as well as impacts at the ecosystem scale.

The Affected Environment (Chapter 3) provides a summary of surface water quality for each of the coal resource regions across the nation that were evaluated in the Draft EIS. The document presents a statewide summary of surface water quality conditions based on recent Clean Water Act (CWA) 305(b) and 303(d) reporting data. However, the discussion is general and does not specifically analyze mining-related impairments, even though the Draft EIS acknowledges that state CWA section 303(d) reports routinely identify coal mining as a pollution source. This additional refinement and analysis would be particularly helpful given that the proposed rule is intended to better protect streams from mining-related impacts. In the absence of this analysis, at a minimum, we recommend that the data be broken out to indicate water quality reporting results for surface waters within the mining regions of each state, rather than the state as a whole. This would allow for a finer depiction of existing water quality conditions in areas where coal mining has historically occurred. Ideally, consideration of the appropriate mining alternative and the potential cumulative effects associated with that alternative would be considered at a site-specific or watershed scale based on existing background conditions.

The discussion in the Environmental Consequences of Alternatives (Chapter 4) focuses almost exclusively on the Appalachian region. Chapter 4 briefly characterizes the extent of physical loss of streams from mining activities from the Appalachian region and relies on a very small data set. We recommend that SMCRA permit data or another similar information be considered to provide a more complete baseline depiction of the

physical effects of coal mining activities across all seven coal resource regions of the country.

The analysis presented in the Draft EIS assesses only a few state waters. (e.g., 16 of 26 states whose data is presented in the document have assessed less than 25% of waters). EPA would like to work with OSMRE to consider other ways to present an analysis that gives a more complete depiction of the quality of surface waters and the effects of mining activities on these resources in coal mining regions across the country.

We are pleased that the DEIS evaluates the impacts associated with the proposed alternatives on environmental justice communities. However, we note the lack of any identified coal-producing counties in West Virginia with low-income populations and the lack of discussion regarding potential disproportionate placement of adverse environmental, economic, social, or health impacts to low-income and minority populations from surface coal mining activities. We recommend that this information be included in the final EIS. EPA would like to work with OSMRE on ways to clarify the environmental justice analysis.

Stream Restoration

Restoration has been proposed as a way to reduce overall impacts and maintain ecological functions. There is scientific literature (especially in the Appalachian coal mining region) showing that restoration via a natural channel design (NCD) has not succeeded in meeting appropriate endpoints (e.g., attainment or maintenance of any existing, reasonably foreseeable, or designated use under section 101(a) or 303(c) of the Clean Water Act) of the affected stream segment following the completion of mining and reclamation. We recommend that the Final EIS discuss the state of the current science of stream restoration and its limitations.

We recommend that OSMRE include a study by Palmer and Hondula 2014. This study examined 434 stream mitigation projects from 117 surface mining permits and found that most of them still show signs of water quality, habitat, and biological impairments >5 years post-restoration. Further, a joint study by EPA and OSMRE scientists (Pond et al 2014) regarding the long-term impacts of surface mining on Appalachian stream ecology found that, despite good habitat, the chemical signature was strong enough to impair the majority of the streams studied 15 to 30 years post-reclamation. In preparing the Final EIS, we recommend that OSMRE consider whether "restoration" of stream habitats (the most common mitigation requirement under the proposed SPR) will "restore" biological health downstream of surface mining and valley filling. Studies, including Northington et al. 2011, Palmer 2005, Fritz et al. 2010, have implicated that structural measures such as habitat and invertebrate assemblage quality do not adequately relate to stream functions. We recommend that the Final EIS include a discussion on the use of appropriate ecological function indicators as restoration endpoints. It would be helpful for the Final EIS to include a section that accurately reviews the literature on restoration ecology to offer scientific commentary to help evaluate the likelihood of reaching the predicted outcomes of the alternatives.

Environmental Provisions Considered in Alternatives

The preamble to the proposed rule states, "We also are considering adopting an alternative that would provide equal protection to all streams, without regard to whether the stream is perennial, intermittent, or ephemeral." It is not clear which of the eight action alternatives evaluated in the Draft EIS is intended to represent what is described in the preamble. In Chapter 3, baseline summaries of streams within each of the coal resource regions are limited to intermittent and perennial streams only. Chapter 4's analysis of the effects of alternatives on surface waters is not broken out by the different stream types. In the absence of such information, it is difficult to evaluate the relative effects of one alternative versus another in protecting all streams.

OSMRE may want to consider an alternative with additional protections based on stream type similar to the approach presented in Alternative 4. This approach applies additional environmental protections to operations based on factors that the Regulatory Authority has determined require special consideration, i.e., proposed activities in state-designated High Quality or Exceptional streams, operations in strata known to produce acid or toxic mine drainage, operations that would exacerbate conditions in watersheds already with impaired streams, etc. The EPA would like to work with OSMRE to determine whether this or similar effective provisions could be a meaningful addition to the Preferred Alternative.

We also note that the Preferred Alternative does not include the establishment of corrective action thresholds, as are included in several other alternatives. Including thresholds or similar provisions in the Preferred Alternative would improve environmental protection by providing an objective early detection system that could prevent adverse impacts from developing to the point that they cause material damage, requiring more costly corrective measures. Doing so would also nicely complement proposed data collection and analysis provisions before, during and after mining, which are considered in the majority of other alternatives.

Specific Comments

Page 3-320, Section 3.9.1 Introduction, first paragraph, second sentence: Suggest re-phrasing the sentence beginning with, "The Clean Water Act defines a wetlands as..." to read, "For purposes of the Clean Water Act, wetlands are defined as...." The statute does not define the term "wetlands."

Page 3-321, Section 3.9.2 Wetlands Status and Trends, second paragraph, first sentence: Suggest re-phrasing or deleting the sentence, "Despite regulations and a positive trend of wetland acreage, wetlands are lost in the U.S. at an estimated rate of 290,000 acres per year (Dahl, 2006)." This sentence appears contradictory and, at a minimum, is confusing.

Page 4-7: We request that the "Scope of Impact" should be more clearly defined, as "small, medium, large" geographic areas are too arbitrary for accurate impact characterization. We suggest use of more defined areas such as watershed scales (e.g., HUC 8, HUC 12) or Ecoregions (e.g. Level II, Level III). Use of population size and dollar amounts as size thresholds when considering impact on communities and economies, respectively, are also recommended.

Page 4-8: Table 4.0-1. The seven different "Impact Characterization" categories again seem somewhat arbitrary and poorly defined because they rely on vague terminology (e.g., "small/medium/large" area, "short-term/long-term" impact). How are thresholds between categories decided? Given the potential importance of the alternatives comparison, these categories need a quantifiable justification/description.

Page 4-29, 4-30, Table 4.0-18, 4-37: While the Model Mine approach is valuable for relative comparison of the alternatives across different regions of the U.S., also consider alternatives on smaller spatial scales because variability within regions and among mine locations can be high for some critical factors (e.g., geologic formations likely to produce selenium, AMD, etc.).

Page 4-46, second-to-last paragraph, last sentence: Suggest noting that, in addition to NWP 21, current NWPs 49 and 50 also authorize coal mining related activities – Coal Re-mining (NWP 49) and Underground Coal Mining (NWP 50).

Page 4-50, line 1: Clarify that "water-treatment structure" often involves only a sedimentation pond that allows precipitation of particulates, but does not adequately treat dissolved solids. Total dissolved solids (TDS) are discharged from the ponds and a substantial body of scientific literature has now shown impacts of elevated TDS on stream biota (see additional research not cited in the DEIS below).

Page 4-50, Chemical Effects on Surface Waters: We suggest considering including information on selenium or selenium criteria.

Page 4-55, Table 4.2.1-1 and 4-57: With regard to baseline monitoring, while it may be valid to compare relative merits of the alternatives on baseline water quality across mine regions, the alternatives should also be evaluated on the magnitude of impact relative to baseline water quality within a region or permit area. Baseline water quality may already be impacted and near an ecological threshold where even minor additional degradation could lead to disproportionate biological effects. For example, EPA has suggested a chronic aquatic life benchmark value for conductivity of 300 µS/cm in Central Appalachian streams (U.S. EPA 2011). If baseline data indicates stream conductivity is already elevated, the additional impact of a proposed permit action, even if minor, should be considered relative to such an impairment threshold.

Page 4-56, Table 4.2.1-1: While many of the alternatives (2, 3, 4, 5 and 8 [preferred]) require additional monitoring during mining and reclamation, alternatives 5 and 8 (preferred) have no associated corrective action threshold. Additional monitoring and

data collection could be rendered ineffective without objective criteria describing when corrective actions are needed and what specific actions are required.

Page 4-66, Stream Miles Downstream of Mine Sites Experiencing Water Quality Improvements: It seems this section would be better suited in the Cumulative Impacts section (4.5) because any evaluation of downstream impacts should consider additional disturbances existing in the watershed.

Page 4-66, paragraph 2: We suggest the following information be considered: "In general, these studies describe coal mining's effects on stream quality but do not specify the particular aspect of mine operations that generates the adverse effects." Several researchers have now demonstrated that elevated stream TDS from mining activities negatively affects benthic macroinvertebrate communities (see selected citations below in addition to those in the DEIS). While the ionic composition of the TDS may affect level of toxicity, the relationship between mining, elevated TDS, and impaired stream biota cannot be denied.

Page 4-67, paragraph 1: As noted in the DEIS, use of results from a single study to estimate downstream effects of mining (6.2 miles [Petty et al. 2010]) adds significant uncertainty to regional estimates because of differences in mining types/intensity, in composition, precipitation, topography, etc. The level of uncertainty involved undermines the model results on lengths of downstream impacts across regions.

Page 4-70, bullet 2: Though ephemeral streams may be currently restored under CWA 404 requirements, these restored ephemeral channels have shown to have impaired ecosystem functions, as later noted on 4-93 and 4-94 (Fritz et al. 2010). There is also little evidence that restoring stream habitat and geomorphology would similarly restore water quality.

Page 4-89, last paragraph: "…high conductivity can be directly toxic to freshwater organisms..." is correct but contradicts statement above regarding an absence of what particular aspect of mining generates adverse effects. U.S. EPA (2011), which establishes a conductivity benchmark for central Appalachia of 300 µS/cm, should also be cited and addressed in this section. We recommend that the Final EIS include additional and updated citations (see partial list below) to better demonstrate the body of scientific literature available on mining effects to aquatic and terrestrial systems.

Page 4-93, paragraph 2: Include reference to the selenium criteria.

Page 4-134, paragraph 4: Provide more information to demonstrate that complete restoration of hydrologic form and ecological function can be accomplished for headwater steams

Page 4-333, paragraph 1: We recommend that cumulative impacts and alternatives analysis consider existing, baseline condition of the resources when evaluating future actions.

Page 4-334, footnote: EPA (2011) documents a scientifically valid, field-based benchmark for protection of aquatic life; we recommend that this be considered and addressed in the Final EIS.

Page 4-346, Assessment of Cumulative Impacts by Resource, Table 4.5-2: As in previous sections, the alternatives comparison is done in a qualitative fashion, with the result being "beneficial", "negative", or "neutral" cumulative effect. Given all the potential variables involved in determining cumulative effects, it is difficult to understand how the conclusions were drawn or what constitutes the differences between result categories.

Citations

Presser, T.S., 2013, Selenium in ecosystems within the mountaintop coal mining and valley-fill region of southern West Virginia—assessment and ecosystem-scale modeling: U.S. Geological Survey Professional Paper 1803, 86 p. http://dx.doi.org/10.3133/pp1803.

Presser, T.S. and Luoma, S.N., 2010, A methodology for ecosystem-scale modeling of selenium: Integrated Environmental Assessment and Management, v. 6, no. 4, p. 685-710.

Bernhardt, E. S., & Palmer, M. A. (2011). River restoration: the fuzzy logic of repairing reaches to reverse catchment scale degradation. Ecological Applications, 21(6), 1926-1931.

Palmer, M. A., & Hondula, K. L. (2014). Restoration as mitigation: analysis of stream mitigation for coal mining impacts in southern Appalachia. Environmental science & technology, 48(18), 10552-10560.

Northington, R. M., Benfield, E. F., Schoenholtz, S. H., Timpano, A. J., Webster, J. R., & Zipper, C. (2011). An assessment of structural attributes and ecosystem function in restored Virginia coalfield streams. Hydrobiologia, 671(1), 51-63.

Fritz, K. M., Fulton, S., Johnson, B. R., Barton, C. D., Jack, J. D., Word, D. A., & Burke, R. A. (2010). Structural and functional characteristics of natural and constructed channels draining a reclaimed mountaintop removal and valley fill coal mine. Journal of the North American Benthological Society, 29(2), 673-689.

Pond, G. J., Passmore, M. E., Pointon, N. D., Felbinger, J. K., Walker, C. A., Krock, K. J., & Nash, W. L. (2014). Long-term impacts on macroinvertebrates downstream of reclaimed mountaintop mining valley fills in central Appalachia. Environmental management, 54(4), 919-933.